DOCUMENT RESUME

ED 036 186 24 EM 007 772

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TITLE PLANNING OF OBJECTIVES, LEARNING SEQUENCES, AND UNITS FOR IPI.
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SPONS AGENCY OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C. BUREAU OF RESEARCH.
BUREAU NO BR-6-2867
PUB DATE JUL 68
CONTRACT OEC-1-7-062867-3053
NOTE 6P.

EDRS PRICE EDRS PRICE MF-$0.25 HC-$0.40
DESCRIPTORS CURRICULUM DESIGN, *CURRICULUM DEVELOPMENT, EDUCATIONAL OBJECTIVES, *INDIVIDUALIZED INSTRUCTION, INDIVIDUALIZED PROGRAMS, UNITS OF STUDY (SUBJECT FIELDS)
IDENTIFIERS INDIVIDUALLY PRESCRIBED INSTRUCTION, IPI

ABSTRACT

INDIVIDUALLY PRESCRIBED INSTRUCTION (IPI) DEPENDS UPON A STRUCTURED CURRICULUM MADE UP OF SEQUENCES OF BEHAVIORAL OBJECTIVES WHICH THE STUDENT MUST MASTER IN MOVING FROM ONE LEVEL OF ABILITY TO SOME SUBSEQUENT HIGHER LEVEL. THE CURRICULUM DESIGNER HAS THE RESPONSIBILITY OF SPECIFYING, WITH VARYING DEGREES OF EXACTNESS, HOW THE TYPICAL PUPIL WOULD MOVE FROM A BEGINNING LEVEL OF ABILITY TO SOME FINAL LEVEL OF ABILITY. AN OVERALL SEQUENCE SPANNING SEVERAL SCHOOL YEARS MAY BE THOUGHT OF AS PROGRESSION OF UNITS WITH SPECIFIC OBJECTIVES. THE TERM "UNIT" HAS A RELATIVELY SPECIFIC MEANING WHEN USED IN THE CONTEXT OF THE IPI CURRICULA. IT INVOLVES SOME UNITARY ABILITY COMPOSED OF A LIMITED NUMBER OF OBJECTIVES. THE OVERALL GOAL FOR A UNIT SHOULD BE WELL ENOUGH DEFINED SO THAT IT DESCRIBES HOW A PUPIL WOULD BE EVALUATED TO DETERMINE WHETHER OR NOT HE HAD THE ABILITIES INDICATED BY THE GOAL OF THE UNIT. (JY)

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C. M. Lindvall
July 1968

Planning of Objectives, Learning Sequences, and Units for IPI

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IPI operation depends upon a structured curriculum made up of sequences of objectives that provide a framework for identifying abilities that a pupil must master, for suggesting the learning experiences that must be provided, and for indicating the abilities that must be evaluated as a pupil's progress is being monitored. In essence, any of these sequences of objectives specify the order, if any, in which a pupil must master sequential skills in moving from one level of ability to some subsequent higher level. This means that anyone responsible for developing such a sequence must have a clear idea of the abilities that a pupil can be expected to have when he starts in the sequence (his entering behaviors) and the exact abilities he should have when he completes the sequence (the terminal behavior). Knowing these two things, the task of the curriculum developer is to specify those objectives which constitute the sequential steps in abilities which will permit the learner to move from command of the entering behaviors to command of the terminal behavior.

Obviously this basic task can be carried out at various levels in terms of the extent to which the domain for planning is quite narrowly delimited or relatively broad in scope. For example, the person responsible for planning a sequence for reading instruction that would take a student from the kindergarten level up to the proficiency that he would need for effective functioning in a typical high school has one type of task. The person faced with the problem of designing about one week's

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work that would take a pupil from an ability to pronounce only the short vowel sounds in one syllable words up to the ability of also being able to read certain simple words involving the long vowel sounds and being able to discriminate between situations where the sound is long and where it is short would have quite a different task. The first person, working on the more comprehensive task, might have to start with some general descriptions of what the pupil should acquire at each grade level (or other type of successive level) and then divide each such level into relatively broad units of work before getting down to sequences of rather specific instructional objectives. The second person, above, would probably be able to start with this last step of working with specific objectives. But in both cases, and at both of these two extreme levels, the curriculum designer has the responsibility of specifying, with varying degrees of exactness, how the typical pupil would move from a beginning level of ability to some final level of ability.

Of course, in the work on IPI the curriculum developers are faced with both of the types of tasks described above. They must plan an overall sequence spanning several school years and then must work down from this to a definition of levels and units and eventually to an identification of the specific objectives within a unit. The differences in the nature of the content in math, reading, and science result in a slightly different overall structure of the curriculum in these areas. For this reason it is not possible to lay down common guidelines for the definition of such broad categories as topics and levels. However, all three subject areas involve the use of units and it is possible to present a set of common suggestions for defining the structure within units. This will be the purpose of the following section.

IPI Curriculum "Units"

The term "unit" has a relatively specific meaning when used within the context of the IPI curricula. Typically it involves a limited number of objectives (varying from one objective up to approximately twenty objectives) dealing with one topic at some particular level in the curriculum.

A unit, as the name implies, should be characterized by some type of "unity" in that it covers some relatively broad and unitary ability of which all of the objectives within the unit constitute a part. This should be such that it is possible to say for any given unit that, "In this unit the pupil should acquire the ability to. . . ." and complete the sentence without merely listing all of the objectives that it includes.

Examples of descriptions of units would include the following:

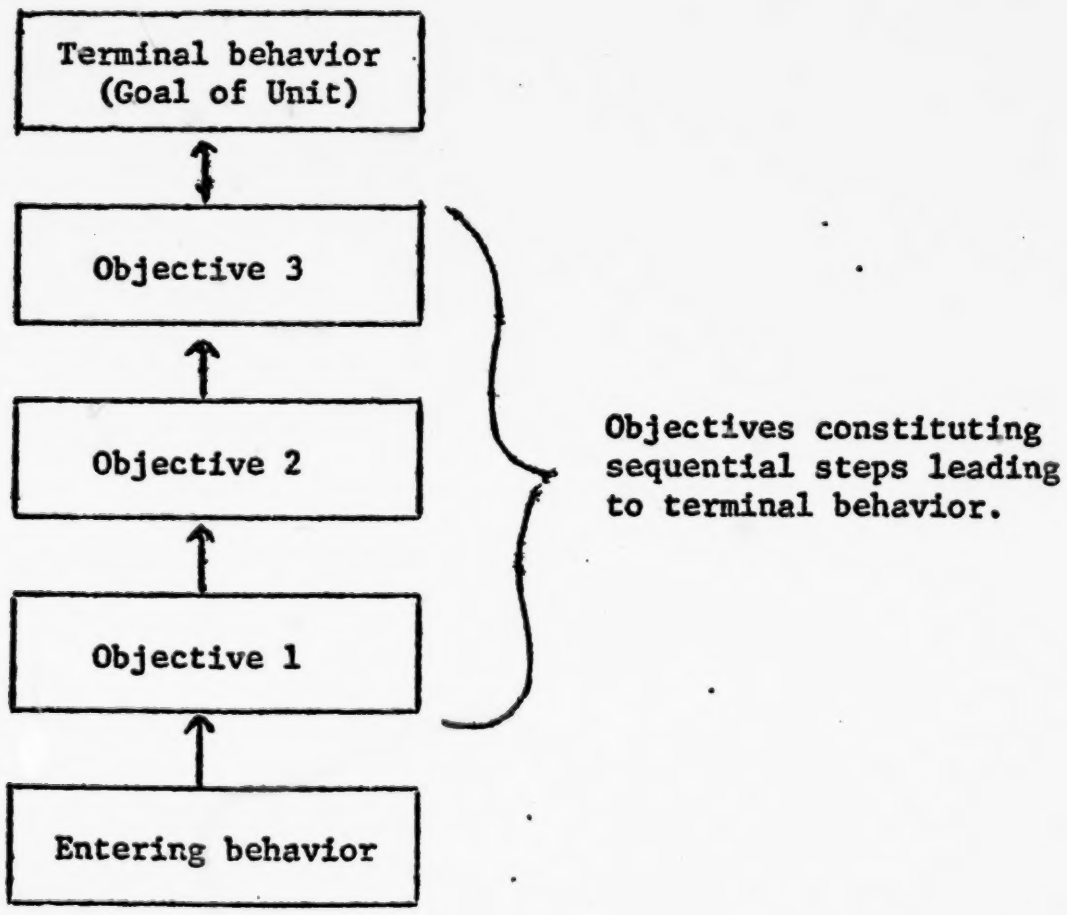
1. Unitary ability--addition of two 2-digit numbers. (The child understands addition of two 2-digit numbers.)

2. Set of ideas that are related--The child should acquire the ability to add with carrying and to subtract with borrowing. (The child understands the processes of adding and subtracting whole numbers in the ten's system.)

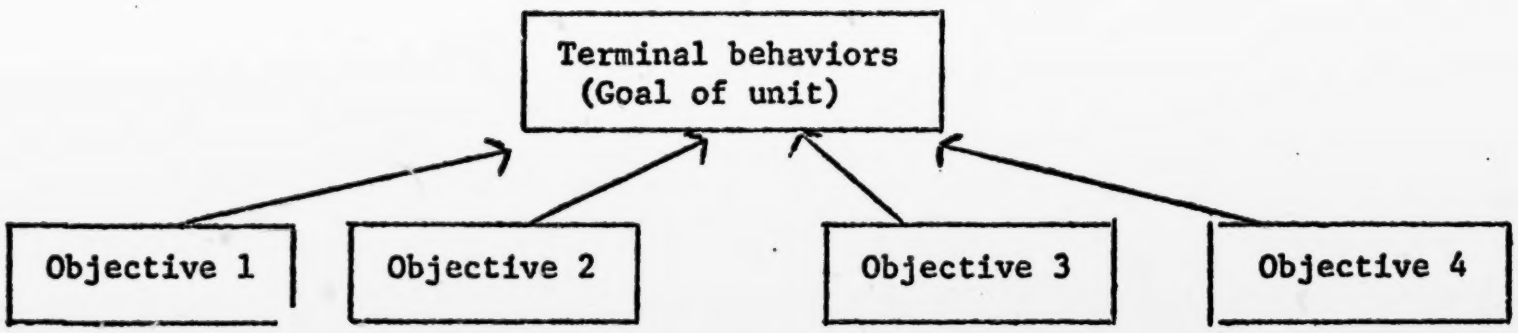
3. In this unit the pupil should acquire the ability to: list all objectives of CV, CVC, combinations for vowels of A, E, consonants M, N, T, P including auditory and visual recognition. This could be described as a story unit--"The Cat and the Rat." (Another example here would be a unit on Combination of Processes for a particular level.)

A general descriptive element of a unit would be that as a result of mastering a unit the student can apply the learnings to some life-like experiences.

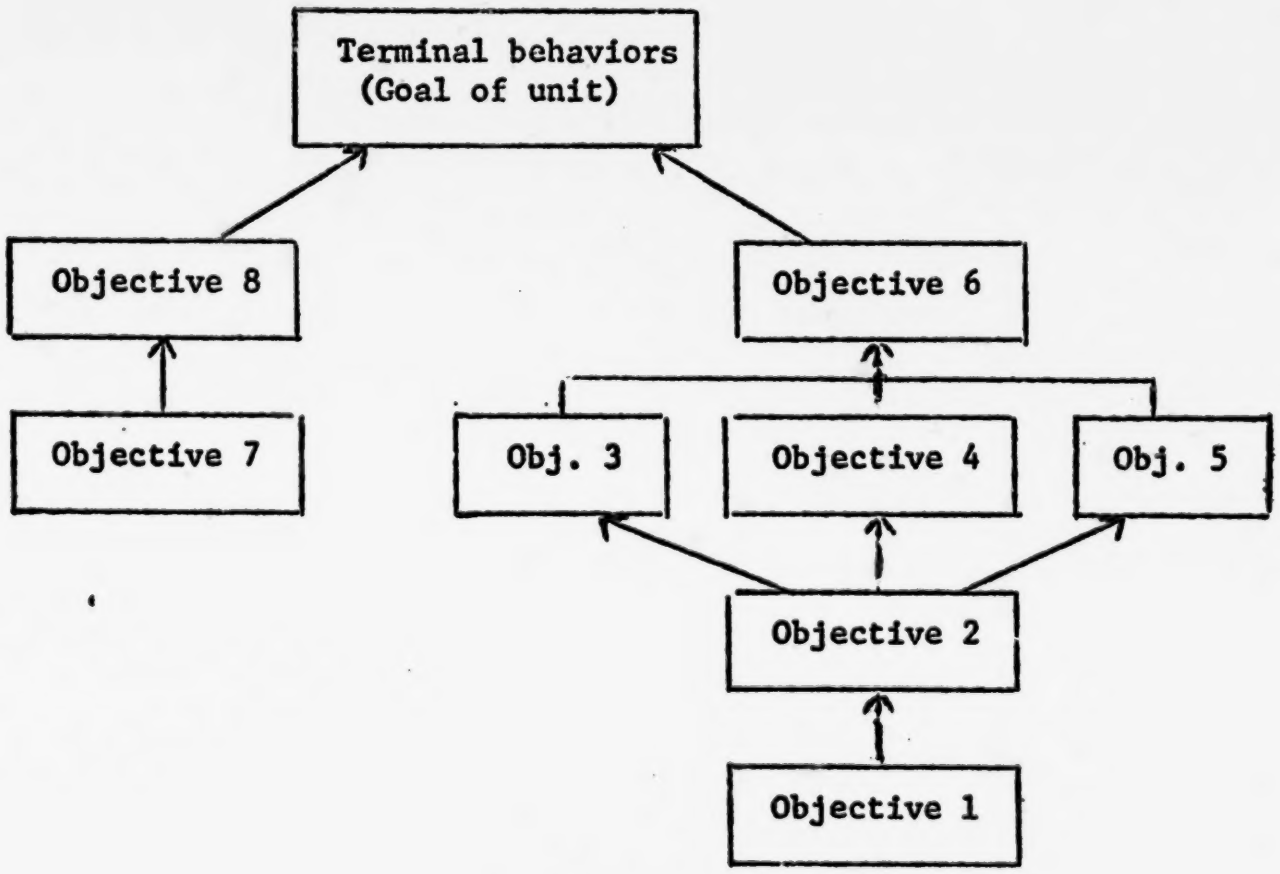
It should also be possible to define the overall goal for the unit by describing how a pupil would be evaluated (tested) to determine whether or not he had the abilities indicated by the goal of the unit. In some cases the overall goal of the unit may be such that its achievement can be assessed by just one type of performance. This would be true in the situation where all of the objectives within the unit constitute one ordered sequence of abilities, each one building on the one preceding it, culminating in the one final, terminal ability. In this situation the goal of the total unit and the final objective in the sequence within the unit are essentially the same. This could be diagramed as follows:



In other situations the goal of the unit may really be a composite of separate abilities (represented by the objectives within the unit) all of which are essential to the student's being able to display the terminal behavior but no one of which is prerequisite to another. This could be diagrammed as follows:



The two foregoing diagrams actually represent the two extremes with respect to the structure of a unit. Many units will possess some of the characteristics of both structures. One example might be the following diagram:



It is such diagrams, having countless variations, which constitute the so-called "Gagné tree structures" and which (we assume) are the goal of a "Resnick component analysis."